**IN THE CLAIMS:**

Please amend the claims as follows. For the convenience of the Examiner, all pending claims, whether amended or not, are presented.

1. (Currently Amended) An integrated circuit die comprising:

a ~~thermal sensor~~ plurality of thermal sensors positioned at predetermined differing positions within the integrated circuit die~~,~~;

an A-D converter coupled to the plurality of thermal sensors ~~sensor~~, wherein ~~the thermal sensor~~ each of the plurality of thermal sensors provides an input to the A-D converter, and the A-D converter converts the input to a digital value representative of the thermal environment ~~of the thermal sensor~~ at each location where the plurality of thermal sensors are located; and

power management circuitry for selectively modifying voltage or frequency of operation for circuitry in close proximity to the at least one of the predetermined differing positions within the integrated circuit in response to the thermal environment of the at least one of the predetermined differing positions.

2. (Currently Amended) An integrated circuit as claimed in claim 1 wherein the ~~thermal sensor~~ each of the plurality of thermal sensors comprises at least one diode.

3. (Currently Amended) An integrated circuit as claimed in claim 2 wherein the ~~thermal sensor~~ each of the plurality of thermal sensors comprises a plurality of diodes wherein each diode in the plurality is coupled in series.

4. (Original) An integrated circuit as claimed in claim 3 wherein the plurality of diodes comprises three diodes.

5. (Currently Amended) An integrated circuit as claimed in claim 1 further comprising:

~~a plurality of thermal sensors and~~ select logic circuitry coupled to each of the plurality of thermal sensors and to the A-D converter for selectively coupling each of the plurality of thermal sensors to the A-D converter.

6. (Currently Amended) An integrated circuit as claimed in claim 5 wherein the plurality of thermal sensors are positioned on the integrated circuit in accordance to at least ~~lease~~ one predetermined criteria.

7. (Original) An integrated circuit as claimed 6 wherein a predetermined criteria is sensitivity to thermal resistance.

8. (Currently Amended) An integrated circuit as claimed in claim 1 further comprising communication circuitry and a processor ~~and power management circuitry~~ electrically coupled to the A-D converter, the processor ~~for~~ receiving the data value from the ~~A-D converter~~ communication circuitry, and providing ~~feedback from the processor~~ control information to control the power management circuitry.

9. (Currently Amended) An integrated circuit as claimed in claim 8 further comprising storage circuitry coupled between the A-D converter and the ~~processor~~ communication circuitry for storing the digital value.

10. (Currently Amended) An integrated circuit as claimed in claim 8 ~~further comprising communication circuitry coupled to the A-D converter for communicating the digital value to~~ wherein the processor is not physically within the integrated circuit.

18. (New) An integrated circuit comprising:

a plurality of thermal sensors positioned at predetermined differing positions within the integrated circuit die, each of the plurality of thermal sensors providing a sense voltage;

select circuitry coupled to the plurality of thermal sensors for selectively providing the sense voltage of each of the plurality of sensors at an output thereof;

an A-D converter coupled to the output of the select circuitry, the A-D converter converting each sense voltage to a digital value representative of the thermal environment at each location where the plurality of thermal sensors are located;

a storage circuit coupled to the A-D converter for storing the digital value;

communication circuitry coupled to the storage circuit for communicating the digital value; and

power management circuitry for selectively modifying voltage or frequency of operation for circuitry in close proximity to the at least one of the predetermined differing positions within the integrated circuit in response to the thermal environment of the at least one of the predetermined differing positions.

19. (New) The integrated circuit of claim 18 further comprising:

a processor coupled to the communication circuitry and to the power management circuit, the processor determining whether the digital value exceeds a predetermined threshold value in order to determine whether to control the power management circuitry to modify voltage or frequency of operation for the circuitry in close proximity to the at least one of the predetermined differing positions.

20. (New) The integrated circuit of claim 19 wherein the processor is located on the integrated circuit.

21. (New) An integrated circuit comprising:

thermal sensing means positioned at predetermined differing positions within the integrated circuit die, each of the thermal sensing means providing a sense voltage;

selection means coupled to the thermal sensing means for selectively providing the sense voltage of each of the thermal sensing means at an output thereof;

A-D conversion means coupled to the output of the selection means, the A-D conversion means converting each sense voltage to a digital value representative of the thermal environment at each location where the thermal sensing means are located;

storage means coupled to the A-D conversion means for storing the digital value;

communication means coupled to the storage means for communicating the digital value; and

power management means for selectively modifying voltage or frequency of operation for circuitry in close proximity to the at least one of the predetermined differing positions within the integrated circuit in response to the sense voltage sensed at the at least one of the predetermined differing positions.